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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,964	07/31/2001	Morihiko Minowa	FUJO 18.889	2573
26304	7590	09/20/2005	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP			FILE, ERIN M	
575 MADISON AVENUE			ART UNIT	
NEW YORK, NY 10022-2585			PAPER NUMBER	
			2634	
DATE MAILED: 09/20/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,964

Applicant(s)

MINOWA ET AL.

Examiner

Erin M. File

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/31/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/31/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

Specification

1. The disclosure is objected to under 37 CFR 1.71, as being so incomprehensible as to preclude a reasonable search of the prior art by the examiner. For example, the following items are not understood:

- a. The *Summary of the Invention* states "An object of the present invention is to provide a synchronization detecting apparatus that is not affected by a channel estimation result" (p. 6, lines 10-11). However, the recitation continues, "a synchronization signal demodulating unit demodulating the synchronization signal by using a result of the channel estimation, wherein synchronization detection is made by using the demodulated synchronization signal" (p. 6, lines 18-22).
- b. "If a process is performed in the belief of this phenomenon, it is determined that an SW is correct and a misunderstanding such that a communication is being made arises, although radio waves are not transmitted from a portable terminal (the reception quality should be the worst because only noise is input), and only noise is input from an antenna" (p. 5 line 24 – p. 6 line 6).

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art.

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Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

A shortened statutory period for reply to this action is set to expire ONE MONTH or THIRTY DAYS, whichever is longer, from the mailing date of this letter.

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

- c. The acronym CDMA requires definition in the specification.
- d. The acronym RAKE requires definition in the specification.
- e. "As a result, wastage such that an unnecessary channel is occupied does not occur" (p. 7, lines 5-7).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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4. Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The *Summary of the Invention* states "An object of the present invention is to provide a synchronization detecting apparatus that is not affected by a channel estimation result" (p. 6, lines 10-11). However, independent claims 1 and 11 state "a channel estimating unit making channel estimation by using the pilot signal from which at least the synchronization signal is removed; and a synchronization signal demodulating unit demodulating the synchronization signal by using a result of the channel estimation, wherein synchronization detection is made by using the demodulated synchronization signal."

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 claims dependency upon itself and is therefore rendered indefinite.

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7. Claim 5 provides for the use of said channel estimating unit and a channel estimating unit for demodulating data, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 4, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura.

Claims 1, 11, Nakamura discloses synchronization detection comprising a channel estimation by using the pilot signal from which at least the synchronization signal is removed and a synchronization signal demodulating the synchronization signal by using a result of the channel estimation, wherein synchronization detection is made by using the demodulated synchronization signal (col. 14, lines 45-48).

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Claim 2, inherits the limitations of Claim 1, Nakamura further discloses channel estimating unit makes channel estimation by using a pilot signal in a slot other than a slot including the synchronization signal (col. 14, lines 45-48).

Claim 4, inherits the limitations of Claim 1, Nakamura further discloses channel estimating unit makes channel estimation by using signal bits used for channel estimation, from which a bit of the synchronization signal is removed (col. 14, lines 45-48).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to Claims 1, 2, 4, and 11 above, and further in view of Abu-Dayya.

Claim 6, inherits the limitations of Claim 1, Nakamura fails to disclose channel estimating unit makes weight coefficients applied to each slot, different from data

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modulation coefficients, used when making the channel estimation. However, Abu Dayya discloses the use of weighting coefficients for each slot for use in channel estimation (abstract). Because slot weighting coefficients are well known in the art for reducing inter-symbol interference and noise, it would be obvious to one skilled in the art at the time of invention to incorporate Abu-Dayya's slot weighting into Nakamura's invention.

Claim 7, inherits the limitations of Claim 1, Nakamura fails to disclose weight coefficients, applied to each slot at the time of channel estimation, varied according to reception quality information obtained from a reception quality estimating circuit. However, Abu-Dayya discloses weighting coefficients are determined from the calculated signal to interference ratio, to minimize signal interference, which is essentially the same as the use of a reception quality estimating circuit to vary the values of weighting coefficients (abstract). Because slot weighting coefficients are well known in the art for reducing inter-symbol interference and noise, it would be obvious to one skilled in the art at the time of invention to incorporate Abu-Dayya's slot weighting into Nakamura's invention.

Claim 8, inherits the limitations of Claim 1, Nakamura fails to further disclose weight coefficients, which are applied to each slot at the time of channel estimation, are varied according to a fading speed obtained from a fading frequency estimating circuit. However, Abu-Dayya discloses appropriate weights for the each slot are chosen

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according to signal fading (col. 1, 59-61). Because slot weighting coefficients are well known in the art for reducing inter-symbol interference and noise, it would be obvious to one skilled in the art at the time of invention to incorporate Abu-Dayya's slot weighting into Nakamura's invention.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to Claims 1, 2, 4, and 11 above, and further in view of Baum.

Claim 9, inherits the limitations of Claim 1, Although Nakamura fails to disclose synchronization detection is made by varying parameters for synchronization detection according to a state of a propagation path, Baum discloses the varying of weighting parameters in response to the propagation path (col. 20, 62-63). Because slot weighting coefficients in response to arrival paths reduces inter-symbol interference and noise, it would be obvious to one skilled in the art at the time of invention to incorporate Baum's slot weighting into Nakamura's invention.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to Claims 1, 2, 4, and 11 above, and further in view of Popovic.

Claim 10, inherits the limitations of Claim 1, Although Nakamura fails to disclose synchronization detection is made by using an output of a path having a largest

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correlation value among outputs of a RAKE receiver of a CDMA receiving device, Popovic discloses the use of a peak correlation detector for synchronization detection (col. 9, lines 60-65). The use of strong correlation values for channel estimation is well known in the art and it would therefore be obvious to one skilled in the art at the time of invention to incorporate Popovic's correlation path detection into Nakamura's invention.

Claim Objections

14. Claim 10 is objected to because of the following informalities:

Claim 10, the acronyms CDMA, RAKE require proper definition.

Appropriate correction is required.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File



9/7/2005



STEPHEN CHIN
SUPERVISORY PATENT EXAMINE
TECHNOLOGY CENTER 2600